



# ASIP CENTENNIAL EDITORIAL

## *The American Journal of Pathology* Centennial Project

### *The Centennial Celebration Is Over, But the Science Moves Forward*

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The *American Journal of Pathology* Centennial Project has commemorated the 100th anniversary of the founding of the American Society for Experimental Pathology (ASEP) and its affiliation with the Federation of American Societies for Experimental Biology (FASEB) by publishing a series of monthly articles throughout the past year. The *AJP* is the official journal of the American Society for Investigative Pathology (ASIP), which traces its roots to the merger of ASEP and the American Association of Pathologists and Bacteriologists (AAPB) in 1976. The *AJP* Centennial Project has included editorials, perspectives, commentaries, and reviews that spotlight advances in investigative pathology research published in the *AJP* and its predecessor journals, the *Journal of the Boston Society of Medical Sciences* and *The Journal of Medical Research*. These articles have been educational, enlightening, and sometimes entertaining, and I hope that you have enjoyed reading them as much as I have. Publication of this closing *AJP* Centennial Project Editorial coincides with the ASEP Centennial Celebration at the ASIP 2013 Annual Meeting on Experimental Biology in Boston, MA, and marks the start of a new century of experimental pathology research.

In my April 2012 editorial announcing the *AJP* Centennial Project,<sup>1</sup> I had the relatively easy task of outlining the history of ASEP, AAPB, their merger into the American Association of Pathologists (AAP), and the re-incorporation in 1992 as ASIP. Similarly, I described the evolution of the *AJP* from its predecessor journals and provided my reflections on the history of these esteemed journals. In this concluding editorial, I have the much more difficult task of speculating on the future of investigative pathology rather than simply reporting on its past. My task was recently made somewhat easier, however, when in December 2012, the *New England Journal of Medicine* (*NEJM*) published a brief editorial entitled “A Glimpse of the Next 100 Years in Medicine” to mark the conclusion of its 200th year of publication.<sup>2</sup> Given *NEJM*’s additional 100

years of experience and my admiration of all things Boston (including the Institute of Contemporary Art, site of the ASIP 2013 Centennial Reception and Dinner), I will echo some of the points made in that editorial and provide my pathological perspective on the future of our scientific discipline.

Most importantly to both medicine and pathology, “the pace of biomedical discovery will accelerate.”<sup>2,p2538</sup> New metabolomic, proteomic, genomic, and epigenetic testing on human specimens combined with detailed electronic health records will revolutionize both clinical practice (precision medicine) and investigative pathology. The boundaries between basic research and medical practice will be blurred, and frequently, mechanistic insights and new hypotheses will be generated from clinically acquired data. Massive data sets derived from genetic testing and large patient populations, (ie, *big data*) will require new approaches to informatics and force us to confront difficult privacy and medicological issues regarding data sharing and informed consent. For both diagnostic anatomic pathology and a large portion of investigative pathology that relies on microscopic examination of cells and tissues, new imaging and analytical tools will become integral parts of our professional lives.<sup>3,4</sup> However, this future will present us with some, perhaps, unexpected and surprising results that will challenge our very identity as pathologists and scientists. For example, a recent publication in *Lab Chip* reported the results of an interesting study on BioGames.<sup>5</sup> The authors reported that the combined diagnostic accuracy of approximately 1000 untrained individuals located in more than 60 countries looking at digital microscopic images of uninfected and malaria-infected red blood cells on personal computers, tablets, and mobile phones was equivalent to that of expert medical professionals. I find this report both scary (for diagnostic pathologists) and inspirational. I seriously doubt that pathologists will lose their clinical relevance in the future, and indeed, the discipline has embraced change in advocating for

next-generation, personalized, and third-track pathology.<sup>6–8</sup> Integration of big data into investigative pathology research is also occurring rapidly, and it is just a matter of time before informatics training is a required element of graduate and postgraduate education in pathology research.

As we move proudly into ASIP's second century of scientific discovery, this is an exciting time to be an investigative pathologist. We should be honored and humbled to build on the scientific foundation laid by our predecessors in ASEP. With the help of ASIP's members, including its trainees, we will redefine our discipline in the new era of pathology, informatics, and genomics.

## References

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